

### **REMARKS**

Claims 1-4, 7, 9-10 and 34-36 are pending. Claims 5, 6, 8 and 11-33 were previously canceled. Claims 1, 9, 34 and 35 have been amended, incorporating subject matter disclosed in previously entered claims in on, *e.g.*, page 12, line 23 of the corresponding PCT publication. No new matter is added by the claim amendments. Favorable consideration of the currently pending claims is respectfully requested in light of the foregoing amendments and following remarks.

#### ***Rejections Under 35 U.S.C. § 112***

All claims were rejected as allegedly indefinite under 35 U.S.C. § 112, second paragraph. The Examiner asserts that the terms “high capacity” and “high flow” are indefinite. Claim 1 has been amended to remove these terms, and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph, is respectfully requested.

#### ***Rejections Under 35 U.S.C. § 102***

Claims 1-4, 7, 9 and 34-36 are rejected under 35 U.S.C. § 102(b) on the basis that they are anticipated by U.S. Patent No. 3,434,479 to Till *et al.* (“Till”). Applicant respectfully traverses the rejection in view of the amendments presented above and the following remarks.

Till describes a cigarette filter formed by impregnating an adsorbent with a water-soluble permanganate. (Till, col. 1, lines 24-25 and col. 2, lines 61-63). The adsorbent is impregnated with the permanganate by soaking it in an aqueous permanganate solution. (*Id.*,

col. 2, lines 63-67). The particle sizes of the adsorbent media are recommended to be between 20 and 200 mesh (*id.*, col. 2, lines 53-60), which converts to between 0.0331 inches and 0.0029 inches. Particles larger than this “are avoided because they cannot be packed closely, with the result that channeling occurs and the removal of nitrogen oxides is less than that obtained when the particles are in the 20 to 200 mesh range.” (*Id.*, col. 2, lines 55-59).

Claim 1, as amended, includes the recitation that “the filtration media comprises particles with a nominal 1/8” particle size.” This recitation is clearly well outside the range disclosed in Till (0.0029 to 0.0331 inches), and for at least this reason the subject matter of amended Claim 1 is not anticipated by Till.

Nor is the subject matter of amended Claim 1 rendered obvious by Till. As explained above, Till clearly teaches away from using particles having a larger (or smaller) particle size than those between 20 and 200 mesh. A person of ordinary skill in the art would be deterred from modifying Till to include particles having a nominal 1/8” particle size as claimed, because the modification would render the cigarette filter of Till unsuitable for its intended purpose.

For at least the reasons presented above, Claim 1, as amended, is novel and nonobvious over Till, and applicant respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Claims 2-4, 7, 9 and 34-36 are dependent on Claim 1 and include all of its limitations. As Claim 1 is believed to be allowable, these claims are also allowable as dependent on an allowable base claim. Accordingly, applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 102(b) be withdrawn.

Claims 1, 2, 7, 9 and 34-36 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,730,948 to Klatte *et al.* ("Klatte"). Applicant respectfully traverses the rejection in view of the amendments presented above and the following remarks.

Klatte describes a media for use in the production of chlorine dioxide formed from zeolite crystals and preferably impregnated with potassium permanganate. (Klatte, col. 3, lines 24-65). The concentration of potassium impregnate in the zeolite crystals is "from about 1% to about 8% or 10%." (*Id.*, col. 4, lines 16-20).

As noted above, Claim 1 has been amended to recite that "the porous substrate comprises activated alumina." Claim 1 also includes the recitation that the porous substrate is impregnated with a "composition consisting of a permanganate and water, wherein the permanganate is a permanganate salt having a solubility in water greater than that of potassium permanganate, wherein the concentration of permanganate salt in the filtration media is approximately 8-25% permanganate salt by weight."

Klatte does not disclose the recitations of amended Claim 1. While Klatte makes passing reference to known use of other substrate materials such as silica gel, alumina and silica-alumina (Klatte, col. 1, lines 56-64), the use of activated alumina is not disclosed or suggested, and Klatte does not actually disclose an alumina-based substrate containing up to 8% permanganate. Moreover, the Gamson patent (U.S. 3,049,399) referred to by Klatte only discloses permanganate concentrations of up to 5%. Thus, neither Klatte nor Gamson

disclose or suggest an alumina substrate (and especially not an activated alumina substrate) having permanganate concentrations of approximately 8-25% by weight as claimed.

Moreover, while Klatte suggests that permanganates other than potassium permanganate may be impregnated in the zeolite, Klatte does not explain how to achieve the higher impregnate concentrations of 8-10% disclosed therein. Zeolite has a very low surface area, and is not particularly porous, as compared to other filtration media. While Klatte suggests that permanganate concentrations of up to about 8-10% in zeolite may be achieved, Klatte provides no teaching regarding how to make a zeolite substrate having permanganate concentrations in this upper range. For the reasons provided above (relatively low surface area and porosity), applicants submit that Klatte has not enabled a zeolite substrate having permanganate concentrations of approximately 8-25% as claimed.

For at least the reasons presented above, Claim 1, as amended, is novel and nonobvious over Klatte, and applicant respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Claims 2, 7, 9 and 34-36 are dependent on Claim 1 and include all of its limitations. As Claim 1 is believed to be allowable, these claims are also allowable as dependent on an allowable base claim. Accordingly, applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 102(b) be withdrawn.

### ***Rejections Under 35 U.S.C. § 103***

Claims 9 and 10 are rejected under 35 U.S.C. § 102(3) as allegedly obvious in view of Till and further in view of U.S. Patent No. 6,004,522 to England *et al.* ("England"). Claims

9 and 10 are dependent on Claim 1 and include all of its limitations. Moreover, England does not cure the deficiencies of Till described above. Accordingly, Claims 9 and 10 are allowable as dependent on allowable Claim 1, and applicant requests that the rejections under 35 U.S.C. § 103(a) be withdrawn.

**CONCLUSION**

Applicant respectfully requests reconsideration of the present application in view of the foregoing. Applicant submits that all claims are in condition for allowance. Such action is courteously solicited. The Examiner is respectfully invited to contact the undersigned if there are matters that can be addressed by telephone at 404-815-6500.

Respectfully submitted,

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